

SUBJECT: Mosquito and West Nile Virus

1. PURPOSE. To provide guidelines and directions in managing the mosquito populations in Fort Huachuca community and reduce the disease threats to humans.

2. GENERAL.

a. Introduction. The Environmental Health section of Preventive Medicine Wellness and Readiness Service in Raymond W. Bliss Army Health Center (RWBAHC), Fort Huachuca participated in the national WNV surveillance, prevention, and control efforts as delineated in the Center for Disease Control (CDC) guidelines. The CDC surveillance shows WNV is spreading towards west of the country and as of January 2003, it has been documented in 39 states and the District of Columbia. Historically, mosquito populations in and around Fort Huachuca are low even during and after the monsoon season. With the recent news of WNV racing westward across the United States, it is possible that the virus may reach Arizona.

b. Background. West Nile Virus is a flavivirus commonly found in Africa, West Asia, and the Middle East. It is closely related to St. Louis encephalitis virus found in the United States. In 1999, the first documented transmission of WNV within the Western Hemisphere occurred in New York City during the summer and fall. The virus can infect humans, birds, mosquitoes, horses and some other mammals. Most people who are infected with the WNV will not have any type of illness. It is estimated that 20% of the people who become infected will develop West Nile fever: a mild symptoms, including fever, headache, and body aches, occasionally with a skin rash on the trunk of the body and swollen lymph glands. The symptoms of severe infection (West Nile encephalitis or meningitis) include headache, high fever, neck stiffness, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. It is estimated that 1 in 150 persons infected with the WNV will develop a more severe form of disease.

c. Transmission Cycle. People become infected with WNV by the bite of an infectious female mosquito. Only certain species of mosquitoes are infectious. Mosquitoes become infected by feeding on infected birds, which have virus circulating in their bloodstream for a few days. It is through this means that they can infect other birds, horses or humans. It is not transmitted from person-to-person. For example, you cannot get the virus from touching or kissing a person who has the disease, or from a health care worker who has treated someone with the disease.

According to the Centers for Disease Control and Prevention, even in areas where WNV has been documented, less than 1% of the mosquitoes are infected. In addition, less than 1% of the individuals who are actually bitten by an infected mosquito develop severe symptoms. Therefore, serious cases of WNV are a very rare occurrence.

3. PERSONAL PROTECTIVE MEASURES.

a. Stay indoors at dawn, dusk, and early evening. This is when mosquitoes are most active. When outdoor, wear long-sleeved shirt, long pants, and socks. Wear loose-fitting clothing to prevent mosquito bites through thin fabric.

b. Use insect repellents that have been approved by the Environmental Protection Agency (EPA). They are safe and effective. These will greatly reduce the risk of being bitten by an infected mosquito.

(1) For your skin, use a product that contains 20-35% DEET (N,N-diethyl-meta-toluamide). DEET in higher concentrations is no more effective.

(2) Use DEET sparingly on children, and don't apply to their hands, which they often place in their eyes and mouths.

(3) Apply DEET lightly and evenly only to exposed skin. Avoid contact with eyes, lips, and broken or irritated skin.

NOTE: To apply to your face, first dispense a small amount of DEET onto your hands and then carefully spread a thin layer.

(4) Wash DEET off when your exposure to mosquitoes ceases.

(5) For your clothing, use an insect repellent spray to help prevent bites through the fabric. Use a product that contains either permethrin or DEET. Permethrin is available commercially as 0.5% spray formulations. Do not inhale aerosol formulations of any insect repellent

(6) Permethrin should only be used on clothing; never on skin.

(7) When using any insect repellent, always FOLLOW LABEL DIRECTIONS.

d. Ensure doors and screens do not allow mosquitoes to enter the home or building.

4. VECTOR REDUCTION.

a. Eliminate standing water around your home and in your neighborhood.

b. Do not allow puddles to form on your lawn as a result of excessive watering.

c. Place tiny holes in the bottom of recycling bins that do not have lids.

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d. Repair leaky pipes and outside faucets. Keep culverts and storm drains cleaned out and ensure rain gutters are not clogged.

e. Replace the water in birdbaths, dog bowls, flowerpots, etc.

f. Get rid of old tires.

g. Prevent or remove any unnecessary containers such as bottles, tin cans, buckets or drums from collecting water.

5. SURVEILLANCE ASSISTANCE.

The community can assist Public Health Personnel by reporting any dead or dying animals to the Ft. Huachuca's Veterinary clinic at 533-0481, Military Police-Environmental at 533-3670, or Environmental and Natural Resources Division – Wildlife at 533-7083.

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